

# Source Water Assessment Report



**Public Water Supply: HUGOTON, CITY OF**

**Assessment Areas Include:  
316, 317, 318**



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Reports were generated with the Automated Source Water Assessment Tool (ASWAT). Assessments were completed online using ASWAT by hundreds of state employees, public water supply staff, and technical assistant providers throughout the State of Kansas.

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# Report Description

## Detailed Explanation of Entire Report:

The 1996 amendments to the Safe Drinking Water Act require each state to develop a Source Water Assessment Program (SWAP) and a Source Water Assessment (SWA) for each Public Water Supply (PWS) that treats and distributes raw source water. In Kansas there are 761 public water supplies that require SWAs. A SWA includes a delineation of the source water assessment area, an inventory of potential contaminant sources, and a susceptibility analysis.

A PWS can consist of one or more individual assessment areas that require different assessments. In general, an assessment area is delineated at a two-mile fixed radius for a groundwater well. A surface water intake assessment area is the upstream-drainage area (watershed), inside the state border. Additionally, an assessment area can consist of an individual well, group of wells, an individual surface water intake, or multiple surface water intakes.

After each assessment is completed a report is automatically generated using an Internet-based application called the Automated Source Water Assessment Tool (ASWAT). The individual assessment reports combine to form the entire SWA report for a PWS.

A map of each Assessment Area was also generated with ASWAT. However, for security reasons the maps are not included in this report. To obtain a copy of the map(s), please contact your local PWS.

All PWS reports will be available for viewing and downloading on KDHE's Watershed Management Section website(<http://www.kdhe.state.ks.us/nps>) in 2004.

## HUGOTON, CITY OF Summary:

AA	Type	Diversion Id
316	Ground water multiple wells	004, 003, 003, 009, 010, 12
317	Ground water single well	006
318	Ground water single well	011, 008

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **316**  
Diversion Id's: **004, 003, 003, 009, 010, 12**  
Status: **Accepted**  
Submit Date: **2003-01-29 11:21:56**

## **Executive Summary:**

The Executive Summary gives the assessment area's Susceptibility Likelihood Score (SLS) for each contaminant of concern category.

SLS indicates which contaminant category is most likely to impact a given public water supply. Contaminants of concern for groundwater include microbiological, inorganic compounds, nitrates, synthetic organic compounds, pesticides, and volatile organic compounds. Contaminants of concern for surface water include microbiological, inorganic compounds, eutrophication – phosphorus, sedimentation, synthetic organic compounds, pesticides, and volatile organic compounds.

To determine the assessment area's susceptibility to contamination, a qualitative (semi-quantitative) screening level susceptibility analysis was designed that utilizes general assumptions and best professional judgement. It is a systematic procedure comprised of simple yes/no questions. Each question in the susceptibility analysis focuses on the presence or absence of potential pollution sources in the assessment area. SLS is most useful in helping the Public Water Supply (PWS) focus on water quality protection actions towards a contaminant category of concern. For example, if the SLS for microbiological contamination is high, relative to volatile organic compounds (VOC), water supply protection planners would conclude that the attention should be directed towards microbiological contaminant sources rather than VOC sources.

# Executive Summary

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **316**

## Susceptibility Likelihood Scores for Assessment Area

Contaminant Category	A	B	B*	C	C*	D
Susceptibility Likelihood Score – SLS	<b>69</b>	<b>69</b>	<b>72</b>	<b>68</b>	<b>71</b>	<b>67</b>
SLS Range	Mid	Mid	Mid	Mid	Mid	Mid

**A** – Microbiological

**B\*** – Nitrates

**C\*** – Pesticides

**B** – Inorganic Compounds

**C** – Synthetic Organic Compounds

**D** – Volatile Organic Compounds

## Susceptibility Likelihood Range

SLS Range	
<b>0–50</b>	<b>Low Susceptibility</b>
<b>51–80</b>	<b>Moderate Susceptibility</b>
<b>81–100</b>	<b>High Susceptibility</b>

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## Potential Sources:

The Potential Sources section lists all the sites that have been identified as potential sources of contamination.

Potential sources of contamination may include land uses, industry, or businesses that could generate or store chemicals/substances that could potentially contaminate the water supply only if released into the environment. Both unregulated sites from business location databases and regulated sites from various KDHE databases were compiled. Additional sites could have been added by an evaluator through the assessment process to supplement the original data.

The 1987 Standard Industrial Classifications (SIC) were used to identify potential contaminate sites. The SIC system classifies establishments into industries on the basis of the primary activities of the establishment.

Each assessment area is delineated with 3 assessment zones. These zones can be used to get a general understanding of the potential influence sites have based on proximity to the water supply. Zone A is a 100-foot radius around a groundwater well and a 1000-foot radius around a surface water intake. Zone B is a 2000-foot radius around wells and a hydrological delineated buffer around the surface water sources. Zone C is a 2-mile radius around wells and the balance of the watershed for intakes. The potential sources listed in this section are sorted to show all the potential sources in Zone A first, Zone B second, and Zone C third.

**Although a facility or business is identified in the study as a potential concern, it does not necessarily mean a release or spill has occurred. Contamination could only occur if certain chemical substances are released into the environment and filter into the water supply source.**

The data for the potential sources of contamination was compiled from May through August in 2002. Some of the databases used were incomplete datasets that are continually being updated. Due to the incompleteness, inaccuracies, and new development, it is possible that sources of potential contamination that are in the assessment area are not included in the report. Inaccurate locations could also cause sources to show up in the assessment area that are not actually in the assessment. Additionally, duplication between the datasets could cause sites to show up multiple times in the assessment area.

# Potential Sources

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **316**

## Unregulated Potential Site Sources

Source No.	SIC Description	SIC ID	Zone
221300	General Farm, Primarily Crop	191	B
221390	Veterinary Services, Specialties	742	B
221262	Oil and Gas Field services	1389	B
221265	Oil and Gas Field services	1389	B
221286	Oil and Gas Field services	1389	B
221314	Single-family Housing Construction	1521	B
221257	Nonresidential Construction	1542	B
221410	Nonresidential Construction	1542	B
221341	Newspapers Publishing and Printing	2711	B
221261	Farm Product Warehousing and Storage	4221	B
221330	Farm and Garden Machinery	5083	B
221338	Petroleum Bulk Stations and Terminals (Truck Farm)	5171	B
221337	Gasoline Service Station	5541	B
221391	Photofinishing Laboratory	7384	B
221421	Top, Body, and Upholstery Repair Shops and Paint Shops	7532	B
221383	Auto Truck Repair Service	7538	B

## Unregulated Potential Site Sources

Source No.	SIC Description	SIC ID	Zone
221422	Auto Truck Repair Service	7538	B
221309	Car Wash	7542	B
221359	Repair Services, Nec	7699	B
221486	Oil and Gas Field services	1389	C
221505	Oil and Gas Field services	1389	C
221476	Nonresidential Construction	1542	C
221442	Commercial Printing NEC	2759	C
221503	Machinery, Except Electrical Manufacturing	3599	C
221485	Farm and Garden Machinery	5083	C
221487	Farm and Garden Machinery	5083	C
221462	Recreational vehicle sales and repair	5561	C
221460	Top, Body, and Upholstery Repair Shops and Paint Shops	7532	C

## Regulated Confined Animal Feeding Operations Potential Site Sources

Did Not Contain Any Of These Potential Site Sources
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## Regulated Hazardous Waste Potential Site Sources

Did Not Contain Any Of These Potential Site Sources
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## Regulated Leaking Storage Tank Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
3000681	Collingwood Grain, Hugoton	06854	B
3000807	Hugoton City Shop/pws #2	08237	B
3001768	Rash Oil Co	26760	B
3001900	Taylor Food Mart #627	27413	B
3002397	Hugoton Power Plant #1	40093	B
3001841	Corner Mart	27126	C

## Regulated Identified Contaminated Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
7000124	PANHANDLE EASTERN – HUGOTON	C109570098	C

## Regulated Solid Waste Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
5000118	Stevens County	0143-S	C

## Regulated Waste Water Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
6001168	HUGOTON MWTP	M-CI07-NO01	C

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## **Added Sources:**

The Added Sources section lists all the sites that have been added as potential sources of contamination by an evaluator through the assessment process to supplement the original data.

The potential sources listed in this section are sorted to show the added potential sources in Zone A first, Zone B second, and Zone C third.

**Although a facility or business was added as a potential concern, it does not necessarily mean a release or spill has occurred. Contamination could only occur if certain chemical substances are released into the environment and filter into the water supply source.**

# Added Sources

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **316**

## Added Potential Site Sources

Source No.	Source Name	SIC ID	Zone
9000450	Kansas Department of Transportation	10018	B
9000031	Oil Company	10026	B
9000300	Oil Company	10026	B
9000490	City of Hugoton	10026	B
9000511	Oil Company	10026	B
9000515	City of Hugoton	10026	B
9000342	Crop Dusting Company	10038	B
9000343	Aerial Pesticide Application Co.	10038	B
9000028	Residence	10067	B
9000345	local business	10067	B
9000339	Grain Inc.	10074	B
9000509	City of Hugoton Beavers Shed	10074	B
9000516	County Fairgrounds	10077	B
9000813	Lumber Company	10088	B
9000487	City Municipal Power Plant	1692	B
9000508	CITY OF HUGOTON POWER PLANT	1692	B
9000311	Animal Health Clinc	2048	B
9000485	Horse Farm	2048	B
9000337	Fertilizer Plant	2875	B
9000338	Fertilizer Plant	2875	B

## Added Potential Site Sources

Source No.	Source Name	SIC ID	Zone
9000340	Grain Inc.	2875	B
9000510	Machine Shop	3499	B
9000448	Chemical storage site	4212	B
9000449	Truck Service Station	4212	B
9000451	Truck Service Loading Station	4212	B
9000452	Bulk Plant	4212	B
9000455	Grain Company	4221	B
9000447	Convenience Store	5541	B
9000498	Auto Service Repair	5541	B
9000513	Mobile Homes Company	6515	B
9000514	Mobile Homes Company	6515	B
9000030	RV Park	7033	B
9000494	local business	7384	B
9000492	Veterinary Clinic	741	B
9000495	Auto Body Shop	7532	B
9000497	Auto Body Repair Shop	7532	B
9000512	Automotive and Electric company	7538	B
9000299	Car Wash	7542	B
9000347	rural residence	10008	C
9000348	rural residence	10008	C

## Added Potential Site Sources

Source No.	Source Name	SIC ID	Zone
9000349	rural residence	10008	C
9000350	rural residence	10008	C
9000351	Farm	10008	C
9000171	Farm	10009	C
9000811	Feed Mill	10009	C
9000812	Feed Mill	10009	C
9000344	County Airport	10026	C
9000175	Pesticide Fertilizer Spraying Company	10038	C
9000325	Pesticide Fertilizer Spraying Company	10038	C
9000341	Cropland Services	10038	C
9000346	rural residence	10067	C
9000319	Tank Battery	1381	C
9000321	Petroleum Company	1381	C
9000352	local business	1389	C
9000324	County Asphalt Plant	2951	C
9000810	local business	4221	C
9000517	Convenience Store	5541	C
9000312	Raceway	7948	C
9000807	Farm	10008	Q

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## **Potential Contaminants Summary:**

The Contaminants Summary shows the number of identified unregulated sources in the assessment area for each contaminant of concern category.

In order to obtain the number of sources for each category, a relationship was correlated between each Standard Industrial Classification (SIC) and the contaminant of concern categories. Each SIC was assessed and associated with contaminant categories. For example, if not managed properly, a car wash (SIC 7542) could potentially contaminate an intake because of inorganic compounds (IOC) and volatile organic compounds (VOC); thus, a car wash is associated with IOCs and VOCs.

A chart displays a count for each contaminant category. The sum for each category represents the total number of identified sources that have been associated with that particular contaminant category. However, the total number of identified sources does not include contaminants from the Added Sources. In our example, a car wash would be considered 2 sources of contamination. It would be a potential source of contamination for IOCs and for VOCs; thus, 1 would be added to the total number of sources in the VOC category and 1 would be added to the IOC category.

# Potential Contaminants Summary

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **316**

## Number of Unregulated Site Sources Identified for each Contaminant Category

MicroBiological	Pesticides	IOC's	SOC's	VOC's	Nitrates
2	1	24	8	12	2

**A** – Microbiological

**B\*** – Nitrates

**C\*** – Pesticides

**B** – Inorganic Compounds

**C** – Synthetic Organic Compounds

**D** – Volatile Organic Compounds

Public Water Supply: **HUGOTON, CITY OF**  
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## Potential Contaminants Listing:

The Potential Contaminants section lists the contaminant of concern category associated with each Standard Industrial Classification (SIC) found in an assessment area. A complete list of contaminant category codes are located at the bottom of this page.

The relationships defined between the Standard Industrial Classifications (SIC) and the contaminant of concern categories are displayed in a table format. Using our car wash example, the relationships can be better illustrated. A car wash could release IOC and VOC chemical substances. The connection is shown by indicating the SIC, 7542, and the associated contaminant categories, IOC (Category B) and VOC (Category D). However, the contaminants listed are not associated with any Added Sources.

The list is sorted by the SIC source description and it only shows unique SIC sources. For example, an assessment area can have 20 car washes in an assessment area, but the list is only going to show contaminant categories associated with car washes onetime. This is because all car washes have the same SIC and every car wash poses the same potential threat to water intakes.

<b>A</b> – Microbiological	<b>B</b> – Inorganic Compounds	<b>B1</b> – Eutrophication – Phosphorous
<b>B2</b> – Sedimentation	<b>B*</b> – Nitrates	<b>C</b> – Synthetic Organic Compounds
<b>C*</b> – Pesticides	<b>D</b> – Volatile Organic Compounds	



# Potential Contaminants Listing

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **316**

## Unregulated Identified Site Sources and associated Potential Contaminant Category

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
7538	Auto Truck Repair Service	Inorganics, VOCs	B
"	"	"	D
7542	Car Wash	Inorganics, VOCs	B
"	"	"	B1
"	"	"	B2
"	"	"	D
5541	Gasoline Service Station	Inorganics, VOCs	B
"	"	"	D
3599	Machinery, Except Electrical Manufacturing	inorganics, VOCs	B
"	"	"	D
1542	Nonresidential Construction	Sedimentation	B2
1389	Oil and Gas Field services	Oil, Salt Water	B
"	"	"	C
5171	Petroleum Bulk Stations and Terminals (Truck Farm)	Inorganics, VOCs	B
"	"	"	D
7384	Photofinishing Laboratory	NA	B
"	"	"	D

## Unregulated Identified Site Sources and associated Potential Contaminant Category.

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
1521	Single-family Housing Construction	Oil, Paint, Pesticides, Fertilizers	A
"	"	"	B1
"	"	"	B2
"	"	"	B*
"	"	"	C
7532	Top, Body, and Upholstery Repair Shops and Paint Shops	Inorganics, VOCs	B
"	"	"	D
742	Veterinary Services, Specialties	Sanitary, Inorganics TSS	A
"	"	"	B
2759	Commercial Printing NEC	Inorganics, VOCs, Semi volatiles	B
"	"	"	C
"	"	"	D
4221	Farm Product Warehousing and Storage	TSS, VOCs	B
"	"	"	D
5083	Farm and Garden Machinery	inorganics	B
191	General Farm, Primarily Crop	fertilizers, Pesticides	B
"	"	"	B1
"	"	"	B2
"	"	"	B*

## Unregulated Identified Site Sources and associated Potential Contaminant Category.

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
191	General Farm, Primarily Crop	fertilizers, Pesticides	C*
2711	Newspapers Publishing and Printing	Inorganics, VOCs, Semi volatiles	B
"	"	"	C
"	"	"	D
5561	Recreational vehicle sales and repair	Inorganics	B
7699	Repair Services, Nec	inorganics	B

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## **Protection Measures:**

The Protection Measures section shows water quality protection measures for the Standard Industrial Classifications (SIC) identified in the assessment area.

Previous sections of this report are designed to show areas that Public Water Supplies (PWS) can focus on to improve the susceptibility of an assessment area. This section helps identify water quality protection measures that a PWS can use as guidance for implementing action for a potential contaminant site in the assessment area. It focuses on protection measures that can reduce the risk of contamination to the water supply.

This portion of the report only displays water quality protection measures for each type of SIC found in the assessment area. It does not display protection measures for each site in the assessment area because every SIC should have the same or similar water quality protection management practices. However, the protection measures listed are not associated with any Added Sources.

# Protection Measures

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **316**

## Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
7538	Auto Truck Repair Service	Inorganics, VOCs	Discharge to POTW. Manage oil products and used oil so that it is not in contact with water	40 CFR 442 and
7542	Car Wash	Inorganics, VOCs	Install and maintain sediment and grease traps where appropriate	40 CFR 442
5541	Gasoline Service Station	Inorganics, VOCs	Maintain area to minimize fuel contamination	NA
3599	Machinery, Except Electrical Manufacturing	inorganics, VOCs	Manage wastes properly and treat process wastewater prior to discharge to a POTW or direct	State or federal Storm water pollution prevention regulations
1542	Nonresidential Construction	Sedimentation	Erosion and Sediment Control	KAR 28–16, KDHE
1389	Oil and Gas Field services	Oil, Salt Water	Proper management of production wastes	KAR 28–41, 45, 40 CFR 435

## Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
5171	Petroleum Bulk Stations and Terminals (Truck Farm)	Inorganics, VOCs	Maintain secondary containment for fuel storage and fueling areas. Maintain and inspect. Effect repairs promptly	State or federal Storm water pollution prevention regulations
7384	Photofinishing Laboratory	NA	Discharge to POTW. Recycle chemicals	CFR 40 459
1521	Single-family Housing Construction	Oil, Paint, Pesticides, Fertilizers	Proper cleaning and disposal of household hazardous waste. Proper storage, application, and clean up of pesticides and fertilizers	KAR 28–48, KDHE, KDEM
7532	Top, Body, and Upholstery Repair Shops and Paint Shops	Inorganics, VOCs	Discharge to POTW. Recycle where appropriate. Properly maintain oil product and waste. Manage paint and solvent wastes properly	NA
742	Veterinary Services, Specialties	Sanitary, Inorganics TSS	Discharge to POT	NA
2759	Commercial Printing NEC	Inorganics, VOCs, Semi volatiles	Recycle chemicals where possible. Discharge to POTW	40 CFR 459 and State or federal Storm water pollution prevention regulations

## Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
4221	Farm Product Warehousing and Storage	TSS, VOCs	Keep the area clean of grain. Use grease traps.	State or federal Storm water pollution prevention regulations
5083	Farm and Garden Machinery	inorganics	Discharge to POTW	NA
191	General Farm, Primarily Crop	fertilizers, Pesticides	Maintain good erosion control practices and minimize the use of chemicals	NA
2711	Newspapers Publishing and Printing	Inorganics, VOCs, Semi volatiles	Recycle chemicals where possible. Discharge to POTW	40 CFR 459 and State or federal Storm water pollution prevention regulations
5561	Recreational vehicle sales and repair	Inorganics	Discharge to a POTW. Store oils and lubricants properly	Discharge to a POTW. Store oils and lubricants properly
7699	Repair Services, Nec	inorganics	Discharge to POTW	NA

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## **Assessment Analysis:**

The Assessment Analysis section displays the numbers assigned to each contaminant of concern category for each question in the susceptibility analysis.

This analysis is based on a decision tree framework consisting of a series of yes/no questions. These questions consider the proximity of contaminant sources to the water supply intake, the type of contaminant, and the application of pollution prevention or water quality protection practices to sources of contamination. As the evaluator moves through the analytical framework, susceptibility points are accumulated based on the presence of contaminant sources in the assessment area.

After all the questions have been answered, the SLS is calculated for each contaminant of concern category. The SLS is determined by counting the number of contamination risk factors found to occur in the delineated assessment area and applying a multiplier to this number. Because the number of contaminant category risk factors is not equal, the multiplier is used to establish a common scale for the SLS of each contaminant category.



# Assessment Analysis

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **316**

## Ground Water Multiple Wells Analysis

**A** – Microbiological    **B** – Inorganic Compounds  
**B\*** – Nitrates            **C** – Synthetic Organic Compounds  
**C\*** – Pesticides        **D** – Volatile Organic Compounds

No.	Question	Response	A	B	B*	C	C*	D
1	Is any well under the influence of surface water?	No	0	0	0	0	0	0
2	Do all PWS wells meet KS PWS water well construction standards?	Yes	0	0	0	0	0	0
3	Is any well less than 30 feet deep?	No	0	0	0	0	0	0
4	Is gravel pack within 20 feet of any well surface?	No	0	0	0	0	0	0
5	Does a PWS own or control all the areas around the wells?	No	1	1	1	1	1	1
6	Does Zone B consist entirely of native grass?	No	2	2	2	2	2	2
7	Is there a contaminated well in Zone B?	Yes	1	1	1	1	1	1
8	Is a class V UIC well present?	No	0	0	0	0	0	0
9	Are any commercial, industrial, or urban areas present in Zone B?	Yes	1	1	1	1	1	1
10	Does each industrial/commercial site and urban area have a water quality protection plan in place?	No	1	1	1	1	1	1
11	Are any non-farm home sites present in Zone B?	Yes	1	0	1	0	1	0
12	Do all the non-farm home sites have a water quality protection plan?	No	1	0	1	0	1	0
13	Are any farmsteads present in Zone B?	Yes	1	1	1	1	1	1
14	Do all farmsteads have a water quality protection plan?	No	1	1	1	1	1	1
15	Is there grazing livestock in Zone B?	Yes	1	0	1	0	0	0
16	Have all livestock producers implemented water quality protection measures?	No	1	0	1	0	0	0
17	Is there livestock confinement in Zone B?	Yes	1	1	1	0	1	0

No.	Question	Response	A	B	B*	C	C*	D
18	Is each confined animal feeding operation registered with KDHE?	No	1	1	1	0	1	0
19	Is there corn or grain sorghum production in Zone B?	Yes	0	0	1	0	1	0
20	Are corn/grain sorghum nutrient and pesticide management plans in use for each site?	No	0	0	1	0	1	0
21	Are any orchards present in Zone B?	No	0	0	0	0	0	0
22	Are orchard nutrient and pesticide management plans in use for each site?	Yes	0	0	0	0	0	0
23	Are there unsewered developments (concentrations of lagoons or septic systems) present in Zone B?	No	0	0	0	0	0	0
24	Is there a railroad or major highway in Zone B or C?	Yes	0	1	1	1	1	1
25	Is there oil production in Zone B or C?	Yes	0	1	0	1	0	1
26	Do coarse textured soils predominate Zones A, B and C?	Yes	1	1	1	1	1	1
27	Is an irrigation well located in Zone B or C?	Yes	0	1	1	1	1	1
28	Is a wastewater treatment facility in Zone B or C?	Yes	1	1	1	1	1	1
29	Is a solid waste landfill in Zone B or C?	Yes	1	1	1	1	1	1
30	Are there unplugged, abandoned water wells present in Zone C?	No	0	0	0	0	0	0
31	Are any commercial, industrial, or urban area present in Zone C?	Yes	1	1	1	1	1	1
32	Does each industrial/commercial site and urban area have a water quality protection plan in place?	No	1	1	1	1	1	1
33	Is there livestock confinement in Zone C?	Yes	1	1	1	1	1	0
34	Is each confined livestock facility registered with KDHE?	No	1	1	1	0	1	0
35	Do all the livestock producers have water quality protection measures in place?	No	1	0	1	0	0	0
36	Are cropland nutrient management plans in place?	No	0	0	1	0	0	0
37	Are cropland pesticide management plans in place?	No	0	0	0	0	1	0
38	Does a perennial stream flow into Zone C?	No	0	0	0	0	0	0
39	Are watershed water quality protection plans in place?	Yes	0	0	0	0	0	0

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Assessment Area: **316**  
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## **Site Comments:**

The Site Comments section lists all the comments that were added for the potential sources of contamination found in the assessment area.

Local comments and feedback from people that are familiar with the assessment area is an important aspect of the assessment. The comments greatly improve the assessment by adding detail to the sites that can be referenced for more information.

This local information may include comments on potential contamination threats (or lack there of), local water quality protection initiatives, etc. Adding comments are optional and are mainly focused on sources in areas that could have the greatest impact on water supply if a spill or release occurred in the environment. It is left to the discretion of the PWS and/or source water assessment committee to add comments.

# Site Comments

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **316**

## Comments for Unregulated Sites

Did Not Receive Any Comments

## Comments for Regulated Confined Animal Feeding Operations Sites

Did Not Receive Any Comments

## Comments for Regulated Hazardous Waste Sites

Did Not Receive Any Comments

## Comments for Regulated Leaking Storage Tank Sites

Did Not Receive Any Comments

## Comments for Regulated Identified Contaminated Sites

Did Not Receive Any Comments

## Comments for Regulated Solid Waste Sites

Did Not Receive Any Comments

## Comments for Regulated Waste Water Sites

Did Not Receive Any Comments
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### **Added Site Comments:**

The Added Site Comments section lists the comments for why sites were added as a potential source of contamination found to the assessment area.

# Added Site Comments

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **316**

## Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
Aerial Pesticide Application Co.	9000343	This is a ariel application site for storage and filling	Alan Thomas
Animal Health Clinc	9000311	Not currently on the map! This location used to be a sale barn, and is currently a animal feeding operation.	Alan Thomas
Auto Body Repair Shop	9000497	This is an auto body repair, and mechanics shop.	Alan Thomas
Auto Body Shop	9000495	NOt currently on the map.	Alan Thomas
Auto Service Repair	9000498	Service Station and auto repair.	Alan Thomas
Automotive and Electric company	9000512	Not currently on the map.	Alan Thomas
Bulk Plant	9000452	This is a bulk plant.	Alan Thomas
CITY OF HUGOTON POWER PLANT	9000508	This is the power plant south of town.	Alan Thomas
Car Wash	9000299	Not currently on the map.	Alan Thomas
Chemical storage site	9000448	This site is home station for alot of semi tankers. Anhydrous etc.	Alan Thomas

## Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
City Municipal Power Plant	9000487	This is the down town power plant.	Alan Thomas
City of Hugoton	9000490	This is a fuel storage tank and pumping area for city equipment.	Alan Thomas
City of Hugoton	9000515	This is a fuel storage area for the plant.	Alan Thomas
City of Hugoton Beavers Shed	9000509	This location is where the city stores Herbicides.	Alan Thomas
Convenience Store	9000447	Not currently on the map.	Alan Thomas
Convenience Store	9000517	Not currently on the map.	Alan Thomas
County Airport	9000344	This is the airport fuel dock.	Alan Thomas
County Asphalt Plant	9000324	Not currently on the map	Alan Thomas
County Fairgrounds	9000516	Livestock showing area.	Alan Thomas
Crop Dusting Company	9000342	This is an crop dusting storage and fill site.	Alan Thomas
Cropland Services	9000341	This is the pesticide and herbicide application loading site for cropland.	Alan Thomas
Farm	9000171	Not currently on the map!	Alan Thomas



## Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
Farm	9000351	Not currently on the map.	Alan Thomas
Farm	9000807	Not currently on the map.	Alan Thomas
Feed Mill	9000811	Not currently on the map.	Alan Thomas
Feed Mill	9000812	Not currently on the map	Alan Thomas
Fertilizer Plant	9000337	Not currently on the map.	Alan Thomas
Fertilizer Plant	9000338	Not currently on the map.	Alan Thomas
Grain Company	9000455	Not currently on the map.	Alan Thomas
Grain Inc.	9000339	This is the storage facility for all of collingwoods Herbicide and Pesticide.	Alan Thomas
Grain Inc.	9000340	These are the large storage tanks for the anhydrous ammonia that is produced at the plant.	Alan Thomas
Horse Farm	9000485	This is a confined horse stables and feeding area.	Alan Thomas
Kansas Department of Transportation	9000450	Not currently on the map.	Alan Thomas
Lumber Company	9000813	Various chemicals on site , thinners, varnishes, etc.	Alan Thomas

## Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
Machine Shop	9000510	Not currently on the map.	Alan Thomas
Mobile Homes Company	9000513	These are numerous mobile homes that still have septic tanks.	Alan Thomas
Mobile Homes Company	9000514	These are numerous mobile homes still on septic tanks.	Alan Thomas
Oil Company	9000031	Not currently on the map!	Alan Thomas
Oil Company	9000300	Not currently on the map!	Alan Thomas
Oil Company	9000511	This is a bulk fuel loading site, and also is a fuel service area.	Alan Thomas
Pesticide Fertilizer Spraying Company	9000175	Not currently on the map!	Alan Thomas
Pesticide Fertilizer Spraying Company	9000325	Not currently on the map!	Alan Thomas
Petroleum Company	9000321	Oil holding tanks!	Alan Thomas
RV Park	9000030	Not currently on map!	Alan Thomas
Raceway	9000312	Not currently on the map.	Alan Thomas
Residence	9000028	Not currently on the map!	Alan Thomas

## Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
Tank Battery	9000319	Oil holding tanks!	Alan Thomas
Truck Service Loading Station	9000451	This is a salt water hauling company. This where they park all of their tankers. Also have a service bay.	Alan Thomas
Truck Service Station	9000449	Local trucking outfit has service bay for truck services.	Alan Thomas
Veterinary Clinic	9000492	Not currently on the map.	Alan Thomas
local business	9000345	This is a local busines office	Alan Thomas
local business	9000352	Not currently on the map.	Alan Thomas
local business	9000494	Not currently on the map.	Alan Thomas
local business	9000810	Not currently on the map.	Alan Thomas
rural residence	9000346	Not currently on the map.	Alan Thomas
rural residence	9000347	Not currently on the map	Alan Thomas
rural residence	9000348	Not currently on the map.	Alan Thomas
rural residence	9000349	Not currently on the map.	Alan Thomas

## Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
rural residence	9000350	Not currently on the map.	Alan Thomas

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## **Analysis Question Comments:**

The Analysis Question Comments section lists all the comments that were added during analysis portion of the assessment, in which a series of yes/no questions were asked.

Evaluators have the option to add comments to questions to clarify why a response was given or to give more details to a question. Local comments and feedback from people that are familiar with the assessment area is an important aspect of the assessment. The comments greatly improve the assessment by adding clarification and details that could not be identified with a simple yes or no response.

# Analysis Question Comments

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **316**

## Comments for Analysis Questions

Analysis Question	Question Comments	Author
Did Not Receive Any Comments		

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **317**  
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Submit Date: **2003-01-29 11:25:48**

## **Executive Summary:**

The Executive Summary gives the assessment area's Susceptibility Likelihood Score (SLS) for each contaminant of concern category.

SLS indicates which contaminant category is most likely to impact a given public water supply. Contaminants of concern for groundwater include microbiological, inorganic compounds, nitrates, synthetic organic compounds, pesticides, and volatile organic compounds. Contaminants of concern for surface water include microbiological, inorganic compounds, eutrophication – phosphorus, sedimentation, synthetic organic compounds, pesticides, and volatile organic compounds.

To determine the assessment area's susceptibility to contamination, a qualitative (semi-quantitative) screening level susceptibility analysis was designed that utilizes general assumptions and best professional judgement. It is a systematic procedure comprised of simple yes/no questions. Each question in the susceptibility analysis focuses on the presence or absence of potential pollution sources in the assessment area. SLS is most useful in helping the Public Water Supply (PWS) focus on water quality protection actions towards a contaminant category of concern. For example, if the SLS for microbiological contamination is high, relative to volatile organic compounds (VOC), water supply protection planners would conclude that the attention should be directed towards microbiological contaminant sources rather than VOC sources.

# Executive Summary

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **317**

## Susceptibility Likelihood Scores for Assessment Area

Contaminant Category	A	B	B*	C	C*	D
Susceptibility Likelihood Score – SLS	<b>66</b>	<b>66</b>	<b>69</b>	<b>60</b>	<b>65</b>	<b>59</b>
SLS Range	Mid	Mid	Mid	Mid	Mid	Mid

**A** – Microbiological

**B\*** – Nitrates

**C\*** – Pesticides

**B** – Inorganic Compounds

**C** – Synthetic Organic Compounds

**D** – Volatile Organic Compounds

## Susceptibility Likelihood Range

SLS Range	
<b>0–50</b>	<b>Low Susceptibility</b>
<b>51–80</b>	<b>Moderate Susceptibility</b>
<b>81–100</b>	<b>High Susceptibility</b>



Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **317**  
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Status: **Accepted**  
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## Potential Sources:

The Potential Sources section lists all the sites that have been identified as potential sources of contamination.

Potential sources of contamination may include land uses, industry, or businesses that could generate or store chemicals/substances that could potentially contaminate the water supply only if released into the environment. Both unregulated sites from business location databases and regulated sites from various KDHE databases were compiled. Additional sites could have been added by an evaluator through the assessment process to supplement the original data.

The 1987 Standard Industrial Classifications (SIC) were used to identify potential contaminate sites. The SIC system classifies establishments into industries on the basis of the primary activities of the establishment.

Each assessment area is delineated with 3 assessment zones. These zones can be used to get a general understanding of the potential influence sites have based on proximity to the water supply. Zone A is a 100-foot radius around a groundwater well and a 1000-foot radius around a surface water intake. Zone B is a 2000-foot radius around wells and a hydrological delineated buffer around the surface water sources. Zone C is a 2-mile radius around wells and the balance of the watershed for intakes. The potential sources listed in this section are sorted to show all the potential sources in Zone A first, Zone B second, and Zone C third.

**Although a facility or business is identified in the study as a potential concern, it does not necessarily mean a release or spill has occurred. Contamination could only occur if certain chemical substances are released into the environment and filter into the water supply source.**

The data for the potential sources of contamination was compiled from May through August in 2002. Some of the databases used were incomplete datasets that are continually being updated. Due to the incompleteness, inaccuracies, and new development, it is possible that sources of potential contamination that are in the assessment area are not included in the report. Inaccurate locations could also cause sources to show up in the assessment area that are not actually in the assessment. Additionally, duplication between the datasets could cause sites to show up multiple times in the assessment area.

# Potential Sources

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **317**

## Unregulated Potential Site Sources

Source No.	SIC Description	SIC ID	Zone
221476	Nonresidential Construction	1542	B
221503	Machinery, Except Electrical Manufacturing	3599	B
221300	General Farm, Primarily Crop	191	C
221390	Veterinary Services, Specialties	742	C
221262	Oil and Gas Field services	1389	C
221265	Oil and Gas Field services	1389	C
221286	Oil and Gas Field services	1389	C
221486	Oil and Gas Field services	1389	C
221505	Oil and Gas Field services	1389	C
221314	Single-family Housing Construction	1521	C
221257	Nonresidential Construction	1542	C
221410	Nonresidential Construction	1542	C
221341	Newspapers Publishing and Printing	2711	C
221442	Commercial Printing NEC	2759	C
221261	Farm Product Warehousing and Storage	4221	C
221330	Farm and Garden Machinery	5083	C
221485	Farm and Garden Machinery	5083	C

## Unregulated Potential Site Sources

Source No.	SIC Description	SIC ID	Zone
221487	Farm and Garden Machinery	5083	C
221338	Petroleum Bulk Stations and Terminals (Truck Farm)	5171	C
221337	Gasoline Service Station	5541	C
221462	Recreational vehicle sales and repair	5561	C
221391	Photofinishing Laboratory	7384	C
221421	Top, Body, and Upholstery Repair Shops and Paint Shops	7532	C
221460	Top, Body, and Upholstery Repair Shops and Paint Shops	7532	C
221383	Auto Truck Repair Service	7538	C
221422	Auto Truck Repair Service	7538	C
221309	Car Wash	7542	C
221359	Repair Services, Nec	7699	C

## Regulated Confined Animal Feeding Operations Potential Site Sources

Did Not Contain Any Of These Potential Site Sources
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## Regulated Hazardous Waste Potential Site Sources

Did Not Contain Any Of These Potential Site Sources
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## Regulated Leaking Storage Tank Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
3000681	Collingwood Grain, Hugoton	06854	C
3000807	Hugoton City Shop/pws #2	08237	C
3001768	Rash Oil Co	26760	C
3001841	Corner Mart	27126	C
3001900	Taylor Food Mart #627	27413	C
3002397	Hugoton Power Plant #1	40093	C

## Regulated Identified Contaminated Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
7000124	PANHANDLE EASTERN – HUGOTON	C109570098	C

## Regulated Solid Waste Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
5000118	Stevens County	0143-S	C

## Regulated Waste Water Potential Site Sources

Did Not Contain Any Of These Potential Site Sources
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Public Water Supply: **HUGOTON, CITY OF**  
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## **Added Sources:**

The Added Sources section lists all the sites that have been added as potential sources of contamination by an evaluator through the assessment process to supplement the original data.

The potential sources listed in this section are sorted to show the added potential sources in Zone A first, Zone B second, and Zone C third.

**Although a facility or business was added as a potential concern, it does not necessarily mean a release or spill has occurred. Contamination could only occur if certain chemical substances are released into the environment and filter into the water supply source.**

# Added Sources

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **317**

## Added Potential Site Sources

Source No.	Source Name	SIC ID	Zone
9000450	Kansas Department of Transportation	10018	B
9000031	Oil Company	10026	B
9000300	Oil Company	10026	B
9000490	City of Hugoton	10026	B
9000511	Oil Company	10026	B
9000515	City of Hugoton	10026	B
9000342	Crop Dusting Company	10038	B
9000343	Aerial Pesticide Application Co.	10038	B
9000028	Residence	10067	B
9000345	local business	10067	B
9000339	Grain Inc.	10074	B
9000509	City of Hugoton Beavers Shed	10074	B
9000516	County Fairgrounds	10077	B
9000813	Lumber Company	10088	B
9000487	City Municipal Power Plant	1692	B
9000508	CITY OF HUGOTON POWER PLANT	1692	B
9000311	Animal Health Clinc	2048	B
9000485	Horse Farm	2048	B
9000337	Fertilizer Plant	2875	B
9000338	Fertilizer Plant	2875	B

## Added Potential Site Sources

Source No.	Source Name	SIC ID	Zone
9000340	Grain Inc.	2875	B
9000510	Machine Shop	3499	B
9000448	Chemical storage site	4212	B
9000449	Truck Service Station	4212	B
9000451	Truck Service Loading Station	4212	B
9000452	Bulk Plant	4212	B
9000455	Grain Company	4221	B
9000447	Convenience Store	5541	B
9000498	Auto Service Repair	5541	B
9000513	Mobile Homes Company	6515	B
9000514	Mobile Homes Company	6515	B
9000030	RV Park	7033	B
9000494	local business	7384	B
9000492	Veterinary Clinic	741	B
9000495	Auto Body Shop	7532	B
9000497	Auto Body Repair Shop	7532	B
9000512	Automotive and Electric company	7538	B
9000299	Car Wash	7542	B
9000347	rural residence	10008	C
9000348	rural residence	10008	C

## Added Potential Site Sources

Source No.	Source Name	SIC ID	Zone
9000349	rural residence	10008	C
9000350	rural residence	10008	C
9000351	Farm	10008	C
9000344	County Airport	10026	C
9000346	rural residence	10067	C
9000352	local business	1389	C
9000517	Convenience Store	5541	C



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## **Potential Contaminants Summary:**

The Contaminants Summary shows the number of identified unregulated sources in the assessment area for each contaminant of concern category.

In order to obtain the number of sources for each category, a relationship was correlated between each Standard Industrial Classification (SIC) and the contaminant of concern categories. Each SIC was assessed and associated with contaminant categories. For example, if not managed properly, a car wash (SIC 7542) could potentially contaminate an intake because of inorganic compounds (IOC) and volatile organic compounds (VOC); thus, a car wash is associated with IOCs and VOCs.

A chart displays a count for each contaminant category. The sum for each category represents the total number of identified sources that have been associated with that particular contaminant category. However, the total number of identified sources does not include contaminants from the Added Sources. In our example, a car wash would be considered 2 sources of contamination. It would be a potential source of contamination for IOCs and for VOCs; thus, 1 would be added to the total number of sources in the VOC category and 1 would be added to the IOC category.

# Potential Contaminants Summary

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **317**

## Number of Unregulated Site Sources Identified for each Contaminant Category

MicroBiological	Pesticides	IOC's	SOC's	VOC's	Nitrates
2	1	24	8	12	2

**A** – Microbiological

**B\*** – Nitrates

**C\*** – Pesticides

**B** – Inorganic Compounds

**C** – Synthetic Organic Compounds

**D** – Volatile Organic Compounds

Public Water Supply: **HUGOTON, CITY OF**  
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## Potential Contaminants Listing:

The Potential Contaminants section lists the contaminant of concern category associated with each Standard Industrial Classification (SIC) found in an assessment area. A complete list of contaminant category codes are located at the bottom of this page.

The relationships defined between the Standard Industrial Classifications (SIC) and the contaminant of concern categories are displayed in a table format. Using our car wash example, the relationships can be better illustrated. A car wash could release IOC and VOC chemical substances. The connection is shown by indicating the SIC, 7542, and the associated contaminant categories, IOC (Category B) and VOC (Category D). However, the contaminants listed are not associated with any Added Sources.

The list is sorted by the SIC source description and it only shows unique SIC sources. For example, an assessment area can have 20 car washes in an assessment area, but the list is only going to show contaminant categories associated with car washes onetime. This is because all car washes have the same SIC and every car wash poses the same potential threat to water intakes.

**A** – Microbiological    **B** – Inorganic Compounds                      **B1** – Eutrophication – Phosphorous  
**B2** – Sedimentation    **B\*** – Nitrates    **C** – Synthetic Organic Compounds  
**C\*** – Pesticides            **D** – Volatile Organic Compounds

# Potential Contaminants Listing

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **317**

## Unregulated Identified Site Sources and associated Potential Contaminant Category

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
7538	Auto Truck Repair Service	Inorganics, VOCs	B
"	"	"	D
7542	Car Wash	Inorganics, VOCs	B
"	"	"	B1
"	"	"	B2
"	"	"	D
5541	Gasoline Service Station	Inorganics, VOCs	B
"	"	"	D
3599	Machinery, Except Electrical Manufacturing	inorganics, VOCs	B
"	"	"	D
1542	Nonresidential Construction	Sedimentation	B2
1389	Oil and Gas Field services	Oil, Salt Water	B
"	"	"	C
5171	Petroleum Bulk Stations and Terminals (Truck Farm)	Inorganics, VOCs	B
"	"	"	D
7384	Photofinishing Laboratory	NA	B
"	"	"	D

## Unregulated Identified Site Sources and associated Potential Contaminant Category.

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
1521	Single-family Housing Construction	Oil, Paint, Pesticides, Fertilizers	A
"	"	"	B1
"	"	"	B2
"	"	"	B*
"	"	"	C
7532	Top, Body, and Upholstery Repair Shops and Paint Shops	Inorganics, VOCs	B
"	"	"	D
742	Veterinary Services, Specialties	Sanitary, Inorganics TSS	A
"	"	"	B
2759	Commercial Printing NEC	Inorganics, VOCs, Semi volatiles	B
"	"	"	C
"	"	"	D
4221	Farm Product Warehousing and Storage	TSS, VOCs	B
"	"	"	D
5083	Farm and Garden Machinery	inorganics	B
191	General Farm, Primarily Crop	fertilizers, Pesticides	B
"	"	"	B1
"	"	"	B2
"	"	"	B*

## Unregulated Identified Site Sources and associated Potential Contaminant Category.

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
191	General Farm, Primarily Crop	fertilizers, Pesticides	C*
2711	Newspapers Publishing and Printing	Inorganics, VOCs, Semi volatiles	B
"	"	"	C
"	"	"	D
5561	Recreational vehicle sales and repair	Inorganics	B
7699	Repair Services, Nec	inorganics	B

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## **Protection Measures:**

The Protection Measures section shows water quality protection measures for the Standard Industrial Classifications (SIC) identified in the assessment area.

Previous sections of this report are designed to show areas that Public Water Supplies (PWS) can focus on to improve the susceptibility of an assessment area. This section helps identify water quality protection measures that a PWS can use as guidance for implementing action for a potential contaminant site in the assessment area. It focuses on protection measures that can reduce the risk of contamination to the water supply.

This portion of the report only displays water quality protection measures for each type of SIC found in the assessment area. It does not display protection measures for each site in the assessment area because every SIC should have the same or similar water quality protection management practices. However, the protection measures listed are not associated with any Added Sources.

# Protection Measures

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **317**

## Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
7538	Auto Truck Repair Service	Inorganics, VOCs	Discharge to POTW. Manage oil products and used oil so that it is not in contact with water	40 CFR 442 and
7542	Car Wash	Inorganics, VOCs	Install and maintain sediment and grease traps where appropriate	40 CFR 442
5541	Gasoline Service Station	Inorganics, VOCs	Maintain area to minimize fuel contamination	NA
3599	Machinery, Except Electrical Manufacturing	inorganics, VOCs	Manage wastes properly and treat process wastewater prior to discharge to a POTW or direct	State or federal Storm water pollution prevention regulations
1542	Nonresidential Construction	Sedimentation	Erosion and Sediment Control	KAR 28–16, KDHE
1389	Oil and Gas Field services	Oil, Salt Water	Proper management of production wastes	KAR 28–41, 45, 40 CFR 435



## Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
5171	Petroleum Bulk Stations and Terminals (Truck Farm)	Inorganics, VOCs	Maintain secondary containment for fuel storage and fueling areas. Maintain and inspect. Effect repairs promptly	State or federal Storm water pollution prevention regulations
7384	Photofinishing Laboratory	NA	Discharge to POTW. Recycle chemicals	CFR 40 459
1521	Single-family Housing Construction	Oil, Paint, Pesticides, Fertilizers	Proper cleaning and disposal of household hazardous waste. Proper storage, application, and clean up of pesticides and fertilizers	KAR 28–48, KDHE, KDEM
7532	Top, Body, and Upholstery Repair Shops and Paint Shops	Inorganics, VOCs	Discharge to POTW. Recycle where appropriate. Properly maintain oil product and waste. Manage paint and solvent wastes properly	NA
742	Veterinary Services, Specialties	Sanitary, Inorganics TSS	Discharge to POT	NA
2759	Commercial Printing NEC	Inorganics, VOCs, Semi volatiles	Recycle chemicals where possible. Discharge to POTW	40 CFR 459 and State or federal Storm water pollution prevention regulations

## Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
4221	Farm Product Warehousing and Storage	TSS, VOCs	Keep the area clean of grain. Use grease traps.	State or federal Storm water pollution prevention regulations
5083	Farm and Garden Machinery	inorganics	Discharge to POTW	NA
191	General Farm, Primarily Crop	fertilizers, Pesticides	Maintain good erosion control practices and minimize the use of chemicals	NA
2711	Newspapers Publishing and Printing	Inorganics, VOCs, Semi volatiles	Recycle chemicals where possible. Discharge to POTW	40 CFR 459 and State or federal Storm water pollution prevention regulations
5561	Recreational vehicle sales and repair	Inorganics	Discharge to a POTW. Store oils and lubricants properly	Discharge to a POTW. Store oils and lubricants properly
7699	Repair Services, Nec	inorganics	Discharge to POTW	NA

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## **Assessment Analysis:**

The Assessment Analysis section displays the numbers assigned to each contaminant of concern category for each question in the susceptibility analysis.

This analysis is based on a decision tree framework consisting of a series of yes/no questions. These questions consider the proximity of contaminant sources to the water supply intake, the type of contaminant, and the application of pollution prevention or water quality protection practices to sources of contamination. As the evaluator moves through the analytical framework, susceptibility points are accumulated based on the presence of contaminant sources in the assessment area.

After all the questions have been answered, the SLS is calculated for each contaminant of concern category. The SLS is determined by counting the number of contamination risk factors found to occur in the delineated assessment area and applying a multiplier to this number. Because the number of contaminant category risk factors is not equal, the multiplier is used to establish a common scale for the SLS of each contaminant category.

# Assessment Analysis

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **317**

## Ground Water Single Well Analysis

**A** – Microbiological    **B** – Inorganic Compounds  
**B\*** – Nitrates            **C** – Synthetic Organic Compounds  
**C\*** – Pesticides        **D** – Volatile Organic Compounds

No.	Question	Response	A	B	B*	C	C*	D
1	Is the well under the influence of surface water?	No	0	0	0	0	0	0
2	Does the well meet KS water well construction standards?	Yes	0	0	0	0	0	0
3	Is the depth of the well less than 30 feet?	No	0	0	0	0	0	0
4	Are there unplugged, abandoned water wells present in Zone A?	No	0	0	0	0	0	0
5	Is there gravel pack within 20 feet of the surface?	No	0	0	0	0	0	0
6	Does a PWS own or control Zone A?	Yes	0	0	0	0	0	0
7	Does Zone A consist entirely of native grass?	No	1	1	1	1	1	1
8	Is there a contaminated well in the Zone A?	No	0	0	0	0	0	0
9	Is a class V UIC well present?	No	0	0	0	0	0	0
10	Are any commercial, industrial, or urban areas present in Zone B?	Yes	1	1	1	1	1	1
11	Does each industrial/commercial site and urban area have a water quality protection plan in place?	No	1	1	1	1	1	1
12	Are any non-farm home sites present in Zone B?	Yes	1	0	1	0	1	0
13	Do all the non-farm home sites have a water quality protection plan?	No	1	0	1	0	1	0
14	Are any farmsteads present in Zone B?	Yes	1	1	1	1	1	1
15	Do all farmsteads have a water quality protection plan?	No	1	1	1	1	1	1
16	Does Zone B consist entirely of native grass?	No	1	1	1	1	1	1
17	Is there grazing livestock in Zone B?	Yes	1	0	1	0	0	0

No.	Question	Response	A	B	B*	C	C*	D
18	Do all the livestock producers have water quality protection measures in place?	No	1	0	1	0	0	0
19	Is there livestock confinement in Zone B?	Yes	1	1	1	0	1	0
20	Is each confined animal feeding operation registered with KDHE?	No	1	1	1	0	1	0
21	Is there corn or grain sorghum production in Zone B?	Yes	0	0	1	0	1	0
22	Are corn/grain sorghum nutrient and pesticide management plans in use for each site?	No	0	0	1	0	1	0
23	Are any orchards present in Zone B?	No	0	0	0	0	0	0
24	Are orchard nutrient and pesticide plans in use for each site?	Yes	0	0	0	0	0	0
25	Are there unsewered developments (concentrations of lagoons or septic systems) present in Zone B?	Yes	1	1	1	0	0	0
26	Is there a railroad or major highway in Zone B or C?	Yes	0	1	1	1	1	1
27	Is there oil production in Zone B or C?	Yes	0	1	0	1	0	1
28	Do coarse textured soils predominate Zones A, B and C?	Yes	1	1	1	1	1	1
29	Is an irrigation well located in Zone B or C?	Yes	0	1	1	1	1	1
30	Is a wastewater treatment facility in Zone B or C?	Yes	1	1	1	1	1	1
31	Is a solid waste landfill in Zone B or C?	Yes	1	1	1	1	1	1
32	Are there unplugged, abandoned water wells present in Zone B or C?	No	0	0	0	0	0	0
33	Are any commercial, industrial, or urban areas present in Zone C?	Yes	1	1	1	1	1	1
34	Are water quality protection plans in use for each site/area?	No	1	1	1	1	1	1
35	Is there livestock confinement in Zone C?	Yes	1	1	1	1	1	0
36	Is each confined livestock facility registered with KDHE?	No	1	1	1	0	1	0
37	Do all the livestock producers have water quality protection measures in place?	No	1	0	1	0	0	0
38	Are cropland nutrient management plans in place?	No	0	0	1	0	0	0
39	Are cropland pesticide management plans in place?	No	0	0	0	0	1	0
40	Does a perennial stream flow into Zone C?	No	0	0	0	0	0	0
41	Are watershed water quality protection plans in place?	Yes	0	0	0	0	0	0

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## **Site Comments:**

The Site Comments section lists all the comments that were added for the potential sources of contamination found in the assessment area.

Local comments and feedback from people that are familiar with the assessment area is an important aspect of the assessment. The comments greatly improve the assessment by adding detail to the sites that can be referenced for more information.

This local information may include comments on potential contamination threats (or lack there of), local water quality protection initiatives, etc. Adding comments are optional and are mainly focused on sources in areas that could have the greatest impact on water supply if a spill or release occurred in the environment. It is left to the discretion of the PWS and/or source water assessment committee to add comments.

# Site Comments

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **317**

## Comments for Unregulated Sites

Did Not Receive Any Comments

## Comments for Regulated Confined Animal Feeding Operations Sites

Did Not Receive Any Comments

## Comments for Regulated Hazardous Waste Sites

Did Not Receive Any Comments

## Comments for Regulated Leaking Storage Tank Sites

Did Not Receive Any Comments

## Comments for Regulated Identified Contaminated Sites

Did Not Receive Any Comments

## Comments for Regulated Solid Waste Sites

Did Not Receive Any Comments

## Comments for Regulated Waste Water Sites

Did Not Receive Any Comments
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### **Added Site Comments:**

The Added Site Comments section lists the comments for why sites were added as a potential source of contamination found to the assessment area.

# Added Site Comments

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **317**

## Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
Aerial Pesticide Application Co.	9000343	This is a ariel application site for storage and filling	Alan Thomas
Animal Health Clinc	9000311	Not currently on the map! This location used to be a sale barn, and is currently a animal feeding operation.	Alan Thomas
Auto Body Repair Shop	9000497	This is an auto body repair, and mechanics shop.	Alan Thomas
Auto Body Shop	9000495	NOt currently on the map.	Alan Thomas
Auto Service Repair	9000498	Service Station and auto repair.	Alan Thomas
Automotive and Electric company	9000512	Not currently on the map.	Alan Thomas
Bulk Plant	9000452	This is a bulk plant.	Alan Thomas
CITY OF HUGOTON POWER PLANT	9000508	This is the power plant south of town.	Alan Thomas
Car Wash	9000299	Not currently on the map.	Alan Thomas
Chemical storage site	9000448	This site is home station for alot of semi tankers. Anhydrous etc.	Alan Thomas

## Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
City Municipal Power Plant	9000487	This is the down town power plant.	Alan Thomas
City of Hugoton	9000490	This is a fuel storage tank and pumping area for city equipment.	Alan Thomas
City of Hugoton	9000515	This is a fuel storage area for the plant.	Alan Thomas
City of Hugoton Beavers Shed	9000509	This location is where the city stores Herbicides.	Alan Thomas
Convenience Store	9000447	Not currently on the map.	Alan Thomas
Convenience Store	9000517	Not currently on the map.	Alan Thomas
County Airport	9000344	This is the airport fuel dock.	Alan Thomas
County Fairgrounds	9000516	Livestock showing area.	Alan Thomas
Crop Dusting Company	9000342	This is an crop dusting storage and fill site.	Alan Thomas
Farm	9000351	Not currently on the map.	Alan Thomas
Fertilizer Plant	9000337	Not currently on the map.	Alan Thomas
Fertilizer Plant	9000338	Not currently on the map.	Alan Thomas

## Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
Grain Company	9000455	Not currently on the map.	Alan Thomas
Grain Inc.	9000339	This is the storage facility for all of collingwoods Herbicide and Pesticide.	Alan Thomas
Grain Inc.	9000340	These are the large storage tanks for the anhydrous ammonia that is produced at the plant.	Alan Thomas
Horse Farm	9000485	This is a confined horse stables and feeding area.	Alan Thomas
Kansas Department of Transportation	9000450	Not currently on the map.	Alan Thomas
Lumber Company	9000813	Various chemicals on site , thinners, varnishes, etc.	Alan Thomas
Machine Shop	9000510	Not currently on the map.	Alan Thomas
Mobile Homes Company	9000513	These are numerous mobile homes that still have septic tanks.	Alan Thomas
Mobile Homes Company	9000514	These are numerous mobile homes still on septic tanks.	Alan Thomas
Oil Company	9000031	Not currently on the map!	Alan Thomas
Oil Company	9000300	Not currently on the map!	Alan Thomas
Oil Company	9000511	This is a bulk fuel loading site, and also is a fuel service area.	Alan Thomas

## Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
RV Park	9000030	Not currently on map!	Alan Thomas
Residence	9000028	Not currently on the map!	Alan Thomas
Truck Service Loading Station	9000451	This is a salt water hauling company. This where they park all of their tankers. Also have a service bay.	Alan Thomas
Truck Service Station	9000449	Local trucking outfit has service bay for truck services.	Alan Thomas
Veterinary Clinic	9000492	Not currently on the map.	Alan Thomas
local business	9000345	This is a local business office	Alan Thomas
local business	9000352	Not currently on the map.	Alan Thomas
local business	9000494	Not currently on the map.	Alan Thomas
rural residence	9000346	Not currently on the map.	Alan Thomas
rural residence	9000347	Not currently on the map	Alan Thomas
rural residence	9000348	Not currently on the map.	Alan Thomas
rural residence	9000349	Not currently on the map.	Alan Thomas

## Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
rural residence	9000350	Not currently on the map.	Alan Thomas

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## **Analysis Question Comments:**

The Analysis Question Comments section lists all the comments that were added during analysis portion of the assessment, in which a series of yes/no questions were asked.

Evaluators have the option to add comments to questions to clarify why a response was given or to give more details to a question. Local comments and feedback from people that are familiar with the assessment area is an important aspect of the assessment. The comments greatly improve the assessment by adding clarification and details that could not be identified with a simple yes or no response.

# Analysis Question Comments

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **317**

## Comments for Analysis Questions

Analysis Question	Question Comments	Author
Did Not Receive Any Comments		



Public Water Supply: **HUGOTON, CITY OF**  
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## **Executive Summary:**

The Executive Summary gives the assessment area's Susceptibility Likelihood Score (SLS) for each contaminant of concern category.

SLS indicates which contaminant category is most likely to impact a given public water supply. Contaminants of concern for groundwater include microbiological, inorganic compounds, nitrates, synthetic organic compounds, pesticides, and volatile organic compounds. Contaminants of concern for surface water include microbiological, inorganic compounds, eutrophication – phosphorus, sedimentation, synthetic organic compounds, pesticides, and volatile organic compounds.

To determine the assessment area's susceptibility to contamination, a qualitative (semi-quantitative) screening level susceptibility analysis was designed that utilizes general assumptions and best professional judgement. It is a systematic procedure comprised of simple yes/no questions. Each question in the susceptibility analysis focuses on the presence or absence of potential pollution sources in the assessment area. SLS is most useful in helping the Public Water Supply (PWS) focus on water quality protection actions towards a contaminant category of concern. For example, if the SLS for microbiological contamination is high, relative to volatile organic compounds (VOC), water supply protection planners would conclude that the attention should be directed towards microbiological contaminant sources rather than VOC sources.

# Executive Summary

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **318**

## Susceptibility Likelihood Scores for Assessment Area

Contaminant Category	A	B	B*	C	C*	D
Susceptibility Likelihood Score – SLS	<b>54</b>	<b>52</b>	<b>58</b>	<b>52</b>	<b>53</b>	<b>51</b>
SLS Range	Mid	Mid	Mid	Mid	Mid	Low

**A** – Microbiological

**B\*** – Nitrates

**C\*** – Pesticides

**B** – Inorganic Compounds

**C** – Synthetic Organic Compounds

**D** – Volatile Organic Compounds

## Susceptibility Likelihood Range

SLS Range	
<b>0–50</b>	<b>Low Susceptibility</b>
<b>51–80</b>	<b>Moderate Susceptibility</b>
<b>81–100</b>	<b>High Susceptibility</b>

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **318**  
Diversion Id's: **011, 008**  
Status: **Accepted**  
Submit Date: **2003-01-29 11:30:00**

## Potential Sources:

The Potential Sources section lists all the sites that have been identified as potential sources of contamination.

Potential sources of contamination may include land uses, industry, or businesses that could generate or store chemicals/substances that could potentially contaminate the water supply only if released into the environment. Both unregulated sites from business location databases and regulated sites from various KDHE databases were compiled. Additional sites could have been added by an evaluator through the assessment process to supplement the original data.

The 1987 Standard Industrial Classifications (SIC) were used to identify potential contaminate sites. The SIC system classifies establishments into industries on the basis of the primary activities of the establishment.

Each assessment area is delineated with 3 assessment zones. These zones can be used to get a general understanding of the potential influence sites have based on proximity to the water supply. Zone A is a 100-foot radius around a groundwater well and a 1000-foot radius around a surface water intake. Zone B is a 2000-foot radius around wells and a hydrological delineated buffer around the surface water sources. Zone C is a 2-mile radius around wells and the balance of the watershed for intakes. The potential sources listed in this section are sorted to show all the potential sources in Zone A first, Zone B second, and Zone C third.

**Although a facility or business is identified in the study as a potential concern, it does not necessarily mean a release or spill has occurred. Contamination could only occur if certain chemical substances are released into the environment and filter into the water supply source.**

The data for the potential sources of contamination was compiled from May through August in 2002. Some of the databases used were incomplete datasets that are continually being updated. Due to the incompleteness, inaccuracies, and new development, it is possible that sources of potential contamination that are in the assessment area are not included in the report. Inaccurate locations could also cause sources to show up in the assessment area that are not actually in the assessment. Additionally, duplication between the datasets could cause sites to show up multiple times in the assessment area.

# Potential Sources

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **318**

## Unregulated Potential Site Sources

Source No.	SIC Description	SIC ID	Zone
221300	General Farm, Primarily Crop	191	C
221262	Oil and Gas Field services	1389	C
221265	Oil and Gas Field services	1389	C
221286	Oil and Gas Field services	1389	C
221505	Oil and Gas Field services	1389	C
221314	Single-family Housing Construction	1521	C
221476	Nonresidential Construction	1542	C
221341	Newspapers Publishing and Printing	2711	C
221503	Machinery, Except Electrical Manufacturing	3599	C
221261	Farm Product Warehousing and Storage	4221	C
221338	Petroleum Bulk Stations and Terminals (Truck Farm)	5171	C
221337	Gasoline Service Station	5541	C
221462	Recreational vehicle sales and repair	5561	C
221421	Top, Body, and Upholstery Repair Shops and Paint Shops	7532	C
221422	Auto Truck Repair Service	7538	C

## Unregulated Potential Site Sources

Source No.	SIC Description	SIC ID	Zone
221309	Car Wash	7542	C
221359	Repair Services, Nec	7699	C

## Regulated Confined Animal Feeding Operations Potential Site Sources

Did Not Contain Any Of These Potential Site Sources

## Regulated Hazardous Waste Potential Site Sources

Did Not Contain Any Of These Potential Site Sources

## Regulated Leaking Storage Tank Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
3000681	Collingwood Grain, Hugoton	06854	C
3000807	Hugoton City Shop/pws #2	08237	C
3001768	Rash Oil Co	26760	C
3001900	Taylor Food Mart #627	27413	C
3002397	Hugoton Power Plant #1	40093	C

## Regulated Identified Contaminated Potential Site Sources

Did Not Contain Any Of These Potential Site Sources

## **Regulated Solid Waste Potential Site Sources**

Did Not Contain Any Of These Potential Site Sources
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## **Regulated Waste Water Potential Site Sources**

Did Not Contain Any Of These Potential Site Sources
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## **Added Sources:**

The Added Sources section lists all the sites that have been added as potential sources of contamination by an evaluator through the assessment process to supplement the original data.

The potential sources listed in this section are sorted to show the added potential sources in Zone A first, Zone B second, and Zone C third.

**Although a facility or business was added as a potential concern, it does not necessarily mean a release or spill has occurred. Contamination could only occur if certain chemical substances are released into the environment and filter into the water supply source.**

# Added Sources

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **318**

## Added Potential Site Sources

Source No.	Source Name	SIC ID	Zone
9000450	Kansas Department of Transportation	10018	B
9000031	Oil Company	10026	B
9000300	Oil Company	10026	B
9000490	City of Hugoton	10026	B
9000511	Oil Company	10026	B
9000515	City of Hugoton	10026	B
9000342	Crop Dusting Company	10038	B
9000343	Aerial Pesticide Application Co.	10038	B
9000028	Residence	10067	B
9000345	local business	10067	B
9000339	Grain Inc.	10074	B
9000509	City of Hugoton Beavers Shed	10074	B
9000516	County Fairgrounds	10077	B
9000813	Lumber Company	10088	B
9000487	City Municipal Power Plant	1692	B
9000508	CITY OF HUGOTON POWER PLANT	1692	B
9000485	Horse Farm	2048	B
9000337	Fertilizer Plant	2875	B
9000338	Fertilizer Plant	2875	B
9000340	Grain Inc.	2875	B



## Added Potential Site Sources

Source No.	Source Name	SIC ID	Zone
9000510	Machine Shop	3499	B
9000448	Chemical storage site	4212	B
9000449	Truck Service Station	4212	B
9000451	Truck Service Loading Station	4212	B
9000452	Bulk Plant	4212	B
9000455	Grain Company	4221	B
9000447	Convenience Store	5541	B
9000498	Auto Service Repair	5541	B
9000513	Mobile Homes Company	6515	B
9000514	Mobile Homes Company	6515	B
9000030	RV Park	7033	B
9000495	Auto Body Shop	7532	B
9000497	Auto Body Repair Shop	7532	B
9000512	Automotive and Electric company	7538	B
9000299	Car Wash	7542	B
9000171	Farm	10009	C
9000811	Feed Mill	10009	C
9000812	Feed Mill	10009	C
9000344	County Airport	10026	C
9000175	Pesticide Fertilizer Spraying Company	10038	C

## Added Potential Site Sources

Source No.	Source Name	SIC ID	Zone
9000325	Pesticide Fertilizer Spraying Company	10038	C
9000341	Cropland Services	10038	C
9000314	City Municipal Golf Course	10067	C
9000323	City Municipal Golf Course	10067	C
9000319	Tank Battery	1381	C
9000321	Petroleum Company	1381	C
9000324	County Asphalt Plant	2951	C
9000810	local business	4221	C
9000517	Convenience Store	5541	C
9000807	Farm	10008	Q
9000808	rural residence	10067	Q

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## **Potential Contaminants Summary:**

The Contaminants Summary shows the number of identified unregulated sources in the assessment area for each contaminant of concern category.

In order to obtain the number of sources for each category, a relationship was correlated between each Standard Industrial Classification (SIC) and the contaminant of concern categories. Each SIC was assessed and associated with contaminant categories. For example, if not managed properly, a car wash (SIC 7542) could potentially contaminate an intake because of inorganic compounds (IOC) and volatile organic compounds (VOC); thus, a car wash is associated with IOCs and VOCs.

A chart displays a count for each contaminant category. The sum for each category represents the total number of identified sources that have been associated with that particular contaminant category. However, the total number of identified sources does not include contaminants from the Added Sources. In our example, a car wash would be considered 2 sources of contamination. It would be a potential source of contamination for IOCs and for VOCs; thus, 1 would be added to the total number of sources in the VOC category and 1 would be added to the IOC category.

# Potential Contaminants Summary

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **318**

## Number of Unregulated Site Sources Identified for each Contaminant Category

MicroBiological	Pesticides	IOC's	SOC's	VOC's	Nitrates
1	1	15	6	8	2

**A** – Microbiological

**B\*** – Nitrates

**C\*** – Pesticides

**B** – Inorganic Compounds

**C** – Synthetic Organic Compounds

**D** – Volatile Organic Compounds

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## Potential Contaminants Listing:

The Potential Contaminants section lists the contaminant of concern category associated with each Standard Industrial Classification (SIC) found in an assessment area. A complete list of contaminant category codes are located at the bottom of this page.

The relationships defined between the Standard Industrial Classifications (SIC) and the contaminant of concern categories are displayed in a table format. Using our car wash example, the relationships can be better illustrated. A car wash could release IOC and VOC chemical substances. The connection is shown by indicating the SIC, 7542, and the associated contaminant categories, IOC (Category B) and VOC (Category D). However, the contaminants listed are not associated with any Added Sources.

The list is sorted by the SIC source description and it only shows unique SIC sources. For example, an assessment area can have 20 car washes in an assessment area, but the list is only going to show contaminant categories associated with car washes onetime. This is because all car washes have the same SIC and every car wash poses the same potential threat to water intakes.

<b>A</b> – Microbiological	<b>B</b> – Inorganic Compounds	<b>B1</b> – Eutrophication – Phosphorous
<b>B2</b> – Sedimentation	<b>B*</b> – Nitrates	<b>C</b> – Synthetic Organic Compounds
<b>C*</b> – Pesticides	<b>D</b> – Volatile Organic Compounds	

# Potential Contaminants Listing

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **318**

## Unregulated Identified Site Sources and associated Potential Contaminant Category

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
7538	Auto Truck Repair Service	Inorganics, VOCs	B
"	"	"	D
7542	Car Wash	Inorganics, VOCs	B
"	"	"	B1
"	"	"	B2
"	"	"	D
5541	Gasoline Service Station	Inorganics, VOCs	B
"	"	"	D
3599	Machinery, Except Electrical Manufacturing	inorganics, VOCs	B
"	"	"	D
1542	Nonresidential Construction	Sedimentation	B2
1389	Oil and Gas Field services	Oil, Salt Water	B
"	"	"	C
5171	Petroleum Bulk Stations and Terminals (Truck Farm)	Inorganics, VOCs	B
"	"	"	D
1521	Single-family Housing Construction	Oil, Paint, Pesticides, Fertilizers	A
"	"	"	B1

## Unregulated Identified Site Sources and associated Potential Contaminant Category.

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
1521	Single-family Housing Construction	Oil, Paint, Pesticides, Fertilizers	B2
"	"	"	B*
"	"	"	C
7532	Top, Body, and Upholstery Repair Shops and Paint Shops	Inorganics, VOCs	B
"	"	"	D
4221	Farm Product Warehousing and Storage	TSS, VOCs	B
"	"	"	D
191	General Farm, Primarily Crop	fertilizers, Pesticides	B
"	"	"	B1
"	"	"	B2
"	"	"	B*
"	"	"	C*
2711	Newspapers Publishing and Printing	Inorganics, VOCs, Semi volatiles	B
"	"	"	C
"	"	"	D
5561	Recreational vehicle sales and repair	Inorganics	B
7699	Repair Services, Nec	inorganics	B

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## **Protection Measures:**

The Protection Measures section shows water quality protection measures for the Standard Industrial Classifications (SIC) identified in the assessment area.

Previous sections of this report are designed to show areas that Public Water Supplies (PWS) can focus on to improve the susceptibility of an assessment area. This section helps identify water quality protection measures that a PWS can use as guidance for implementing action for a potential contaminant site in the assessment area. It focuses on protection measures that can reduce the risk of contamination to the water supply.

This portion of the report only displays water quality protection measures for each type of SIC found in the assessment area. It does not display protection measures for each site in the assessment area because every SIC should have the same or similar water quality protection management practices. However, the protection measures listed are not associated with any Added Sources.



# Protection Measures

Public Water Supply: **HUGOTON, CITY OF**  
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## Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
7538	Auto Truck Repair Service	Inorganics, VOCs	Discharge to POTW. Manage oil products and used oil so that it is not in contact with water	40 CFR 442 and
7542	Car Wash	Inorganics, VOCs	Install and maintain sediment and grease traps where appropriate	40 CFR 442
5541	Gasoline Service Station	Inorganics, VOCs	Maintain area to minimize fuel contamination	NA
3599	Machinery, Except Electrical Manufacturing	inorganics, VOCs	Manage wastes properly and treat process wastewater prior to discharge to a POTW or direct	State or federal Storm water pollution prevention regulations
1542	Nonresidential Construction	Sedimentation	Erosion and Sediment Control	KAR 28–16, KDHE
1389	Oil and Gas Field services	Oil, Salt Water	Proper management of production wastes	KAR 28–41, 45, 40 CFR 435

## Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
5171	Petroleum Bulk Stations and Terminals (Truck Farm)	Inorganics, VOCs	Maintain secondary containment for fuel storage and fueling areas. Maintain and inspect. Effect repairs promptly	State or federal Storm water pollution prevention regulations
1521	Single-family Housing Construction	Oil, Paint, Pesticides, Fertilizers	Proper cleaning and disposal of household hazardous waste. Proper storage, application, and clean up of pesticides and fertilizers	KAR 28-48, KDHE, KDEM
7532	Top, Body, and Upholstery Repair Shops and Paint Shops	Inorganics, VOCs	Discharge to POTW. Recycle where appropriate. Properly maintain oil product and waste. Manage paint and solvent wastes properly	NA
4221	Farm Product Warehousing and Storage	TSS, VOCs	Keep the area clean of grain. Use grease traps.	State or federal Storm water pollution prevention regulations
191	General Farm, Primarily Crop	fertilizers, Pesticides	Maintain good erosion control practices and minimize the use of chemicals	NA
2711	Newspapers Publishing and Printing	Inorganics, VOCs, Semi volatiles	Recycle chemicals where possible. Discharge to POTW	40 CFR 459 and State or federal Storm water pollution prevention regulations

## Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
5561	Recreational vehicle sales and repair	Inorganics	Discharge to a POTW. Store oils and lubricants properly	Discharge to a POTW. Store oils and lubricants properly
7699	Repair Services, Nec	inorganics	Discharge to POTW	NA

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## **Assessment Analysis:**

The Assessment Analysis section displays the numbers assigned to each contaminant of concern category for each question in the susceptibility analysis.

This analysis is based on a decision tree framework consisting of a series of yes/no questions. These questions consider the proximity of contaminant sources to the water supply intake, the type of contaminant, and the application of pollution prevention or water quality protection practices to sources of contamination. As the evaluator moves through the analytical framework, susceptibility points are accumulated based on the presence of contaminant sources in the assessment area.

After all the questions have been answered, the SLS is calculated for each contaminant of concern category. The SLS is determined by counting the number of contamination risk factors found to occur in the delineated assessment area and applying a multiplier to this number. Because the number of contaminant category risk factors is not equal, the multiplier is used to establish a common scale for the SLS of each contaminant category.

# Assessment Analysis

Public Water Supply: **HUGOTON, CITY OF**  
Assessment Area: **318**

## Ground Water Single Well Analysis

**A** – Microbiological    **B** – Inorganic Compounds  
**B\*** – Nitrates            **C** – Synthetic Organic Compounds  
**C\*** – Pesticides        **D** – Volatile Organic Compounds

No.	Question	Response	A	B	B*	C	C*	D
1	Is the well under the influence of surface water?	No	0	0	0	0	0	0
2	Does the well meet KS water well construction standards?	Yes	0	0	0	0	0	0
3	Is the depth of the well less than 30 feet?	No	0	0	0	0	0	0
4	Are there unplugged, abandoned water wells present in Zone A?	No	0	0	0	0	0	0
5	Is there gravel pack within 20 feet of the surface?	No	0	0	0	0	0	0
6	Does a PWS own or control Zone A?	No	1	1	1	1	1	1
7	Does Zone A consist entirely of native grass?	No	1	1	1	1	1	1
8	Is there a contaminated well in the Zone A?	No	0	0	0	0	0	0
9	Is a class V UIC well present?	No	0	0	0	0	0	0
10	Are any commercial, industrial, or urban areas present in Zone B?	Yes	1	1	1	1	1	1
11	Does each industrial/commercial site and urban area have a water quality protection plan in place?	No	1	1	1	1	1	1
12	Are any non-farm home sites present in Zone B?	Yes	1	0	1	0	1	0
13	Do all the non-farm home sites have a water quality protection plan?	No	1	0	1	0	1	0
14	Are any farmsteads present in Zone B?	Yes	1	1	1	1	1	1
15	Do all farmsteads have a water quality protection plan?	No	1	1	1	1	1	1
16	Does Zone B consist entirely of native grass?	No	1	1	1	1	1	1
17	Is there grazing livestock in Zone B?	Yes	1	0	1	0	0	0

No.	Question	Response	A	B	B*	C	C*	D
18	Do all the livestock producers have water quality protection measures in place?	No	1	0	1	0	0	0
19	Is there livestock confinement in Zone B?	No	0	0	0	0	0	0
20	Is each confined animal feeding operation registered with KDHE?	Yes	0	0	0	0	0	0
21	Is there corn or grain sorghum production in Zone B?	Yes	0	0	1	0	1	0
22	Are corn/grain sorghum nutrient and pesticide management plans in use for each site?	No	0	0	1	0	1	0
23	Are any orchards present in Zone B?	No	0	0	0	0	0	0
24	Are orchard nutrient and pesticide plans in use for each site?	Yes	0	0	0	0	0	0
25	Are there unsewered developments (concentrations of lagoons or septic systems) present in Zone B?	Yes	1	1	1	0	0	0
26	Is there a railroad or major highway in Zone B or C?	Yes	0	1	1	1	1	1
27	Is there oil production in Zone B or C?	Yes	0	1	0	1	0	1
28	Do coarse textured soils predominate Zones A, B and C?	Yes	1	1	1	1	1	1
29	Is an irrigation well located in Zone B or C?	Yes	0	1	1	1	1	1
30	Is a wastewater treatment facility in Zone B or C?	No	0	0	0	0	0	0
31	Is a solid waste landfill in Zone B or C?	No	0	0	0	0	0	0
32	Are there unplugged, abandoned water wells present in Zone B or C?	No	0	0	0	0	0	0
33	Are any commercial, industrial, or urban areas present in Zone C?	Yes	1	1	1	1	1	1
34	Are water quality protection plans in use for each site/area?	Yes	0	0	0	0	0	0
35	Is there livestock confinement in Zone C?	Yes	1	1	1	1	1	0
36	Is each confined livestock facility registered with KDHE?	No	1	1	1	0	1	0
37	Do all the livestock producers have water quality protection measures in place?	No	1	0	1	0	0	0
38	Are cropland nutrient management plans in place?	No	0	0	1	0	0	0
39	Are cropland pesticide management plans in place?	No	0	0	0	0	1	0
40	Does a perennial stream flow into Zone C?	No	0	0	0	0	0	0
41	Are watershed water quality protection plans in place?	Yes	0	0	0	0	0	0

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## **Site Comments:**

The Site Comments section lists all the comments that were added for the potential sources of contamination found in the assessment area.

Local comments and feedback from people that are familiar with the assessment area is an important aspect of the assessment. The comments greatly improve the assessment by adding detail to the sites that can be referenced for more information.

This local information may include comments on potential contamination threats (or lack there of), local water quality protection initiatives, etc. Adding comments are optional and are mainly focused on sources in areas that could have the greatest impact on water supply if a spill or release occurred in the environment. It is left to the discretion of the PWS and/or source water assessment committee to add comments.

# Site Comments

Public Water Supply: **HUGOTON, CITY OF**  
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## Comments for Unregulated Sites

Did Not Receive Any Comments

## Comments for Regulated Confined Animal Feeding Operations Sites

Did Not Receive Any Comments

## Comments for Regulated Hazardous Waste Sites

Did Not Receive Any Comments

## Comments for Regulated Leaking Storage Tank Sites

Did Not Receive Any Comments

## Comments for Regulated Identified Contaminated Sites

Did Not Receive Any Comments

## Comments for Regulated Solid Waste Sites

Did Not Receive Any Comments



## Comments for Regulated Waste Water Sites

Did Not Receive Any Comments
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### **Added Site Comments:**

The Added Site Comments section lists the comments for why sites were added as a potential source of contamination found to the assessment area.

# Added Site Comments

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## Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
Aerial Pesticide Application Co.	9000343	This is a ariel application site for storage and filling	Alan Thomas
Auto Body Repair Shop	9000497	This is an auto body repair, and mechanics shop.	Alan Thomas
Auto Body Shop	9000495	NOt currently on the map.	Alan Thomas
Auto Service Repair	9000498	Service Station and auto repair.	Alan Thomas
Automotive and Electric company	9000512	Not currently on the map.	Alan Thomas
Bulk Plant	9000452	This is a bulk plant.	Alan Thomas
CITY OF HUGOTON POWER PLANT	9000508	This is the power plant south of town.	Alan Thomas
Car Wash	9000299	Not currently on the map.	Alan Thomas
Chemical storage site	9000448	This site is home station for alot of semi tankers. Anhydrous etc.	Alan Thomas
City Municipal Golf Course	9000314	Not currently on the map.	Alan Thomas

## Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
City Municipal Golf Course	9000323	Not currently on the map!	Alan Thomas
City Municipal Power Plant	9000487	This is the down town power plant.	Alan Thomas
City of Hugoton	9000490	This is a fuel storage tank and pumping area for city equipment.	Alan Thomas
City of Hugoton	9000515	This is a fuel storage area for the plant.	Alan Thomas
City of Hugoton Beavers Shed	9000509	This location is where the city stores Herbicides.	Alan Thomas
Convenience Store	9000447	Not currently on the map.	Alan Thomas
Convenience Store	9000517	Not currently on the map.	Alan Thomas
County Airport	9000344	This is the airport fuel dock.	Alan Thomas
County Asphalt Plant	9000324	Not currently on the map	Alan Thomas
County Fairgrounds	9000516	Livestock showing area.	Alan Thomas
Crop Dusting Company	9000342	This is an crop dusting storage and fill site.	Alan Thomas
Cropland Services	9000341	This is the pesticide and herbicide application loading site for cropland.	Alan Thomas

## Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
Farm	9000171	Not currently on the map!	Alan Thomas
Farm	9000807	Not currently on the map.	Alan Thomas
Feed Mill	9000811	Not currently on the map.	Alan Thomas
Feed Mill	9000812	Not currently on the map	Alan Thomas
Fertilizer Plant	9000337	Not currently on the map.	Alan Thomas
Fertilizer Plant	9000338	Not currently on the map.	Alan Thomas
Grain Company	9000455	Not currently on the map.	Alan Thomas
Grain Inc.	9000339	This is the storage facility for all of collingwoods Herbicide and Pesticide.	Alan Thomas
Grain Inc.	9000340	These are the large storage tanks for the anhydrous ammonia that is produced at the plant.	Alan Thomas
Horse Farm	9000485	This is a confined horse stables and feeding area.	Alan Thomas
Kansas Department of Transportation	9000450	Not currently on the map.	Alan Thomas
Lumber Company	9000813	Various chemicals on site , thinners, varnishes, etc.	Alan Thomas

## Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
Machine Shop	9000510	Not currently on the map.	Alan Thomas
Mobile Homes Company	9000513	These are numerous mobile homes that still have septic tanks.	Alan Thomas
Mobile Homes Company	9000514	These are numerous mobile homes still on septic tanks.	Alan Thomas
Oil Company	9000031	Not currently on the map!	Alan Thomas
Oil Company	9000300	Not currently on the map!	Alan Thomas
Oil Company	9000511	This is a bulk fuel loading site, and also is a fuel service area.	Alan Thomas
Pesticide Fertilizer Spraying Company	9000175	Not currently on the map!	Alan Thomas
Pesticide Fertilizer Spraying Company	9000325	Not currently on the map!	Alan Thomas
Petroleum Company	9000321	Oil holding tanks!	Alan Thomas
RV Park	9000030	Not currently on map!	Alan Thomas
Residence	9000028	Not currently on the map!	Alan Thomas
Tank Battery	9000319	Oil holding tanks!	Alan Thomas

## Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
Truck Service Loading Station	9000451	This is a salt water hauling company. This where they park all of their tankers. Also have a service bay.	Alan Thomas
Truck Service Station	9000449	Local trucking outfit has service bay for truck services.	Alan Thomas
local business	9000345	This is a local busines office	Alan Thomas
local business	9000810	Not currently on the map.	Alan Thomas
rural residence	9000808	Not currently on the map	Alan Thomas

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## **Analysis Question Comments:**

The Analysis Question Comments section lists all the comments that were added during analysis portion of the assessment, in which a series of yes/no questions were asked.

Evaluators have the option to add comments to questions to clarify why a response was given or to give more details to a question. Local comments and feedback from people that are familiar with the assessment area is an important aspect of the assessment. The comments greatly improve the assessment by adding clarification and details that could not be identified with a simple yes or no response.



# Analysis Question Comments

Public Water Supply: **HUGOTON, CITY OF**  
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## Comments for Analysis Questions

Analysis Question	Question Comments	Author
Did Not Receive Any Comments		